a. $\frac{d}{dx}[\arcsin(5x)]$

c. $\frac{d}{dx}\left[arc\sec\frac{x}{2}\right]$

(a) $5/\sqrt{1-(5x)^2}$

(b) $e^x/1+(e^x)^2$

b. $\frac{d}{dx}[\arctan e^x]$

d. $\frac{d}{dx}\left[\arcsin x + x\sqrt{1-x^2}\right]$

c $\frac{d}{dx}$ $\sec^{-1}\left(\frac{x}{2}\right)$ $\frac{1}{|\frac{x}{2}|\sqrt{(x/2)^2 \pm 1}} \cdot \frac{1}{2} \Rightarrow \cancel{\boxed{\frac{1}{|x|\sqrt{(\frac{x}{2})^2 \pm 1}}}}$

$\boxed{\frac{1}{|x|\sqrt{\left(\frac{x}{2}\right)^2 - 1}}}$

$4l + 2t$

(d) $f(x) = \arcsin x + x\sqrt{1-x^2}$

$$f'(x) = \frac{1}{\sqrt{1-x^2}} + \frac{\sqrt{1-x^2}}{1} - \frac{2x^2}{2\sqrt{1-x^2}} \qquad \frac{1\cancel{2} + \cancel{2}(1-x^2) - \cancel{2}x^2}{2\sqrt{1-x^2}}$$

$$\boxed{f'(x) = \frac{2-2x^2}{\sqrt{1-x^2}}}$$

39) $x^3+y^3=1$

$\frac{d}{dx}\left(x^3+y^3\right)=\frac{d}{dx}(1)$

$\frac{\cancel{3}x^2+\cancel{3}y^2\frac{dy}{dx}}{\cancel{3}}=\frac{0}{3}$

$x^2+y^2\frac{dy}{dx}=0$

$\frac{-x^2}{y^2}=\frac{dy}{dx}$

$y^3=1-x^3$

$\frac{d^2y}{dx^2}=\frac{y^2(-2x)-(-x^2)2y\frac{dy}{dx}}{(y^2)^2}$

$\frac{d^2y}{dx^2}=\frac{x^2 2y\frac{dy}{dx}-2xy^2}{y^4}$

$\frac{-2xy^2}{y^4}+\frac{x^2 2y}{y^4}\cdot\left(\frac{-x^2}{y^2}\right)$ $\frac{dy}{dx}$

$\frac{y^2}{y^2}\cdot\frac{-2xy^2}{y^4}-\frac{x^4 2y}{y^6}$

$\frac{-2xy^{\cancel{4}3}}{\cancel{y^4}y^5}-\frac{x^4 2\cancel{y}}{\cancel{y^6}y^5}$

$\frac{-2xy^3-2x^4}{y^5}$

$\frac{-2x(1-x^3)-2x^4}{y^5}$

$\frac{-2x+\cancel{2x^4}-\cancel{2x^4}}{y^5}$

$\frac{d^2y}{dx^2}=\frac{-2x}{y^5}$